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[Fortsetzung auf der nächsten Seite]

(54) Title: **VACCINES AGAINST CONFORMATION-DEPENDENT ANTIGENS AND AGAINST ANTIGENS THAT ARE
NOT OR ARE NOT ONLY PROTEINS OR PEPTIDES**

(54) Bezeichnung: **VAKZINE GEGEN KONFORMATIONSABHÄNGIGE ANTIGENE SOWIE GEGEN ANTIGENE, DIE
KEINE ODER NICHT AUSSCHLIESSLICH PROTEINE ODER PEPTIDE SIND**

(57) Abstract: The invention relates to a method that makes it possible to use the highly effective technology of vaccination with deoxyribonucleic acid (DNA) not only on sequence epitopes of proteins or peptides, but also on conformation epitopes. The method also permits the use of DNA vaccination for antigens that are not or are only partially proteins or peptides. The preferred inventive vaccine contains a desoxyribonucleic acid (DNA) as its principal component. This desoxyribonucleic acid codes for a peptide sequence which represents the immunological imitation (mimicry) of a conformation-dependent antigen including protein conformation epitopes or of an antigen that is not or is only partially a protein or peptide. The mimicry peptide, which is also or can also be part of the inventive vaccine, is either an antiidiotypic antibody, an antibody fragment, a peptide derived therefrom or a specifically binding peptide obtained by selection from a peptide gene bank. The invention can be used in medical and veterinary medical immunology, including in the adjuvant therapy of tumor diseases.

(57) Zusammenfassung: Die Erfindung betrifft ein Verfahren, das es erlaubt, die hocheffektive Technologie der Vakzinierung mittels Desoxyribonukleinsäure (DNA) nicht nur auf Sequenzepitope von Proteinen oder Peptiden, sondern auch auf Konformationsepi-
tope anzuwenden. Dieses Verfahren ermöglicht darüber hinaus die Nutzung der DNA-Vakzinierung auch bei solchen Antigenen, die keine oder nur teilweise Proteine oder Peptide sind. Die bevorzugte erfindungsgemäße Vakzine enthält als wesentlichen Bestandteil eine Desoxyribonukleinsäure (DNA), die eine Peptidsequenz kodiert, welche ihrerseits die immunologische Imitation (Mimikry) eines konformationsabhängigen Antigens einschließlich Protein-Konformationsepitope oder eines Antigens, das kein oder nur teil-
weise Protein oder Peptid ist, darstellt. Das Mimikry-Peptid, das ebenfalls Teil der erfindungsgemäßen Vakzine ist oder sein kann, ist entweder ein antiidiotypischer Antikörper, ein Antikörperfragment, ein daraus abgeleitetes Peptid oder ein durch Selektion aus einer Peptid-Genbank erhaltenes spezifisch bindendes Peptid. Anwendungsgebiete der Erfindung sind die medizinische und die veterinärmedizinische Immunologie, darunter die adjuvante Therapie von Tumorerkrankungen.

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Zur Erklärung der Zweibuchstaben-Codes, und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K48/00 A61K39/395 C07K16/42 C07K14/00 C07K16/30
A61K39/00 A61P35/00 A61P31/00 C12N15/13 C12N15/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

MEDLINE, LIFESCIENCES, AIDSLINE, CANCERLIT, EMBASE, CHEM ABS Data, SCISEARCH, STRAND, BIOSIS, WPI Data, EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 00444 A (MAX DELBRUECK CT FUER MOLEKULA ;KARSTEN UWE (DE)) 8 January 1998 (1998-01-08) cited in the application the whole document ---	3,4,6, 10,13, 14,16
X	EP 0 508 282 A (KYOWA HAKKO KOGYO KK) 14 October 1992 (1992-10-14) column 1, line 10-15 column 2, line 45-50 example 2 claims 1,14 --- -/--	3,4,6, 10,13, 14,16



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- * & * document member of the same patent family

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Int. J. Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	GOLLASCH H ET AL: "Identification of immunogenic peptide-mimics for the Thomsen-Friedenreich-glycoantigen." ANNALS OF HEMATOLOGY, vol. 77, no. SUPPL. 2, 1998, page S84 XP000960533 Annual Congress of the German and Austrian Societies of Hematology and Oncology; Frankfurt, Germany; October 25-28, 1998 ISSN: 0939-5555 the whole document	1-10, 13-16, 23-26
X	PINILLA CLEMENCIA ET AL: "All-D peptides recognized by an anti-carbohydrate antibody identified from a positional scanning library." JOURNAL OF MOLECULAR BIOLOGY, vol. 283, no. 5, 13 November 1998 (1998-11-13), pages 1013-1025, XP002152467 ISSN: 0022-2836 page 283, right-hand column, line 2,3 page 1014, left-hand column, paragraph 3 page 1014, right-hand column, paragraph 3 page 1019, left-hand column, paragraph 2 page 1020, right-hand column, paragraph 3 page 1021, left-hand column, paragraph 2 ----- -/--	3-8, 11-16

INTERNATIONAL SEARCH REPORT

Inte lonal Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	<p>APOSTOLOPOULOS V ET AL: "Carbohydrate /peptide mimics: effect on MUC1 cancer immunotherapy." JOURNAL OF MOLECULAR MEDICINE, (1999 MAY) 77 (5) 427-36. REF: 57 , XP000960532 page 429, left-hand column, paragraph 1 -right-hand column, paragraph 2 page 432, left-hand column, paragraph 3 -right-hand column, paragraph 2 ---</p>	1-26
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INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. l. Application No

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